Introduction to Executive Functioning

What is Executive Functioning?

Executive Functioning (EF) can be described as the cognitive processes that assist us in regulating, controlling and managing our thoughts, actions and emotions. Some of these cognitive processes are:

- **Planning** – When we have a task or problem, we can use our cognitive abilities to plan ahead. Depending on our powers of EF, we can decide the best course of action to achieve a desired outcome; we can sequence a set of tasks into the most efficient and logical order and ultimately decide on a sound and effective plan. Autistic and / or neurodivergent people can sometimes have difficulty formulating plans to get through their days and organise tasks into manageable sections.

- **Sequencing** – How we organise and prioritise a set of tasks into a manageable and effective order. For example, if you had a messy bedroom and wanted to tidy it, a useful cognitive sequence may look like this – 'pick up the clothes and rubbish until the carpet is clear, plug in the vacuum, then vacuum the whole carpet'. You might describe this as a 'fluid sequence' meaning each of the three smaller tasks flows into and facilitates the next step, achieving the ultimate goal of a tidy bedroom. Autistic people may not see the interrelated nature or cause and effect between one part of a task and another, making it difficult to even begin some tasks.

- **Working memory** – Typically, our working memory allows us to perform everyday tasks that we have learned how to respond to over time to the point our response is subconscious. Of all the different times, places and situations you may have found yourself feeling thirsty, what would your response be? How would you respond differently if you felt thirsty at home compared with how you would respond if you felt thirsty whilst walking past a shop? Could you draw on your working memory of context and past experience to take the appropriate steps unique to each situation in order to achieve the same outcome – quenching thirst? Autistic people can face more difficulty in consolidating memories and experiences and drawing on them in different contexts appropriately.

- **Monitoring** – Relating to your subconscious or 'auto-pilot'. Imagine walking through a busy shopping centre while simultaneously talking on your phone. You already know how to walk and navigate through a crowd without bumping into people, so, your subconscious carries you through these tasks with little to no conscious thought popping up - your conscious mind is mostly focused on the phone call and what you are saying. Autistic people may face difficulty executing simultaneous tasks; they may not always have their 'auto-pilot' to rely on. If they find themselves in this situation, they may have to focus on one thing at a time or become overloaded to a point of intense distress and anxiety.

- **Cognitive Flexibility –** How we respond to unpredictability and adapt to change. Many of us like structure and routine. The idea of a vague, unorganised, far-off social event can cause anxiety to some more than others, as does a last-minute change of plans. Some of us may be able to go with the flow and adapt to change. Autistic people can often prefer the rigid and the concrete, relying on predictable routines and outcomes, often facing distress and anxiety in the face of unpredictability.

- **Inhibition –** How we manage and control our impulses and emotions. Many of us regularly practice this. Imagine the last time you felt you were being told off or insulted. You may have felt embarrassed, angry or even violent. However, many of us could control these urges in what we deem an acceptable manner, maybe expressing them in a more productive way at a later time. Not everyone has this filter and can act on impulses immediately. 'Stimming' and rocking are common examples of impulsive behaviour in autistic people – commonly used to regulate positively but can sometimes cause overstimulation.

- **Problem Solving** – Problem solving could be described as how we our cognitive functions to achieve a goal, assessing their effectiveness and adapting them if necessary. Can I execute all necessary 'sub-tasks' to achieve the 'bigger picture' goal? Can I dynamically evaluate and assess as I go, retaining what works and dismissing what doesn't, adapting my plan accordingly?

Imagine you are given a bunch of twenty keys of all shapes and sizes to unlock a cupboard door to access a mop and bucket. You use **planning** in identifying the brand on the lock and size of keyhole and then narrowing the bunch down to, say, five possible keys to try. You **initiate** your planning by trying one key at a time, gauging the effect each key has on the lock. You've used **working memory** in order to recall that keys function to unlock doors in the first place, you also use **sequencing** to arrange, order and disregard the keys that have not worked so far. You use **monitoring** to think ahead for just a few seconds – you think about the floor cleaner you will also need as well as which utility room you will use to fill the bucket up with water – simultaneously continuing to try each key, subconsciously. On the fourth key, the lock finally snaps open. You have been able to focus and maintain **attention** during each step of the task. **Problem solved.**

If you think of this sequence as a chain, try to picture how much more difficult this task would become if one or more links were broken e.g. what if you found it extremely difficult to understand the relationship between unlocking the door and mopping the floor, in the context of the overall task? Or you only associated keys with your own front door and no others?

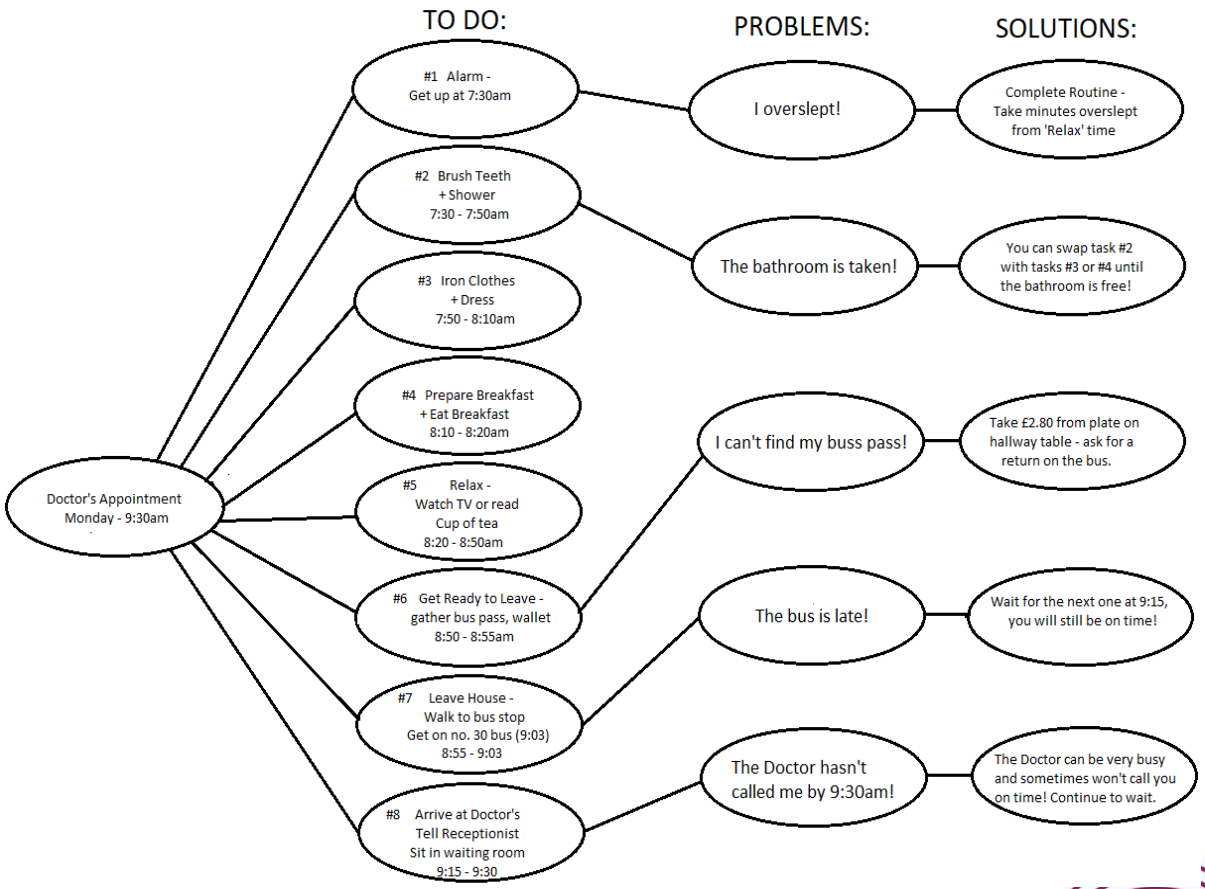
Think about how, on top of all of these obstacles, many autistic people face related conditions such as dyspraxia or ADHD. What further difficulties would this add to multi-faceted cognitive tasks such as the example above?

Strategies to overcome Executive Functioning challenges

Many autistic people need support in understanding the purpose of organisation due to the obstacles posed by executive functioning difficulties. Autistic people are often stigmatised as lazy or incapable when in fact they are often able to fully participate in tasks, whether personal care, leisure, academia, or employment etc., given the right support. Executive Functioning challenges faced by autistic individuals are often simply described as missing the bigger-picture because of intense focus on one small component detail e.g. trying to read a facial expression while focusing intently on the tip of the nose.

Generally speaking, autistic people benefit from visual information, too much verbal information can be hard to process and cause overload and ‘switching off’. Providing a concrete, visual aid such as the one below can help to set out or map tasks into sequenced, manageable sub-tasks. It uses a combination of visual imagery and semantic organisation to highlight the overall task as a fluid sequence, as well as illustrating and reinforcing the relationship between each step:

Staying with studying as an example, good students understand that the high volume of work, resources and tasks would be extremely difficult to juggle and stay on top of internally. Therefore, planning, scheduling and mapping-out are invaluable to self-management. Autistic people may benefit from this level of planning and support in day to day, routine tasks, whenever possible. The diagram below shows another semantic organiser for an everyday task, again showing concrete relationships between each step and the next but also accounts for problems occurring and how to overcome them. Many may possess the cognitive flexibility and working memory to achieve this internally and dynamically, some may benefit from having each possible scenario mapped out:



Other Strategies

- Colour coding – a useful way of prioritising. Attaching colour stickers to work or tasks depending on importance or status, could help successfully manage them. Red may indicate urgent tasks which are highest priority, Amber may indicate ongoing tasks that will need to be completed soon and green may represent completed tasks or ones with no timeframe.
- Desk Trays – ‘Work to complete’ and ‘Completed Work’
- Lists – Writing tasks down on paper and ticking completed ones off as you go.
- Alarms / Timers – autistic individuals can have trouble grasping time as a concept - time management can be very extremely difficult as a result. Using audible prompts and reminders of when to begin and how long to spend on a task can help to remedy this.
- Voice Recording – Audible recording of tasks which can be played back.